



APRIL, 1983

The I/O Connector

The Newsletter of the San Diego Atari Computer Enthusiasts

PRESIDENT'S REPORT

I was pleased to see everyone out at the last meeting. If I seemed a little disorganized, it was that I was. I had just returned from the Computer Faire in San Francisco. So here is a report on the Faire.

The big news in the ATARI area is the Rana Disk Drive. They had one there flashing its little lites and doing nothing as it was a mock-up. The single density will be out in May at \$339 and the double density will be out in June at \$549. Atari had a nice booth there. Nothing new at the show. ATARIWRITER will be out in May and was being demonstrated. Also DIG DUG. For those of you who read my "write Atari" message last month, I am sad to report that Bill Polich is no longer with Atari. Now write to Andy Soderberg at the same address. At the User Group open house, ATARI LOGO was shown. It seems like a good implementation of LOGO. It will be out this Fall. Brøderbund Software is now selling the Bank Street Writer for the Atari. We will have a demonstration of it at the next meeting. They also have several new games out. Watch the ads. Datamost will be releasing new software for the Atari also. Gary Koffler, formerly with Datasoft, is now Director of new Product Development. I was hoping to see MICRO MAINFRAME's new disk drive but didn't make connection. I came across a great book at the Faire. It is called "Mapping the Atari." It's a COMPUTE! publication. It is not only a memory map but has explanations and examples for almost every memory location in your Atari. Dennis Costarakis and I went to the Synapse open house Thursday evening. We saw many interesting new games in development plus they have started an application software division to develop business and utility software. John Harris is now working for them. We will have demonstrations of some of their new products at the next meeting. I hope to have some slides from the show at the next meeting.

George Risk Industries has a 800 type detachable keyboard for the 400. It does not disable the 400 keyboard. Until April 20, it is \$80 for the keyboard only, or \$159 for the keyboard, enclosure and installation kit. Call 800-445-5218 if you're interested.

The Personal Computer Society has several special interest groups that some of you might be interested in. A few are: DIG SIG for disabled users; PERSONAL INVESTMENT SIG and ROBOTICS SIG. If any are of interest, call me for information.

Norm Davis has volunteered to be Membership Chairman. Thank you, Norm. He will be keeping track of memberships and signing up new members at the meeting. If you can't get to the meeting, give Norm a call and he will send you our membership application.

Randy Turner, who works for Sega, has volunteered to teach a graphics oriented assembly language class if there is enough interest. More at the April meeting.

Last but not least, here is an excerpt from a letter from On-Line Computer Center. "On-Line Computer Center is now having a 20 to 40 percent-off sale on all Atari software in the store. We are currently out of Atari hardware, but will special order items for SDACE members at 10 percent off list with one-third down. Our service technician, Jim, has been doing an excellent job on Atari service repairs and appreciates all your referrals. We have enjoyed working with your organization and hope this sale and special order offer will be of interest to them.

Sincerely, John I. Rigoli"

EDITOR'S OUTPUT

What happened to the typesetting?

This month I have opted to simplify somewhat. I have composed the lion's share of the Connector in the comfort of my tent, rather than spending untold hours downtown at the typesetting keyboard. The result: a slightly less professional look, but deep down, the same ol' Connector.

These have been some tumultuous times for me, in both my personal and professional life. Happily, things seem to be working out more smoothly than I had anticipated. With this in mind, I am pleased to announce that I plan to continue to edit the Connector, for the duration.

Good luck to Ted Langlett and Tom Bennett who've gone to careers up north. Thanks as usual to our regular contributors. Special thanks to Ara Dirdadian, as well as father and son team Steve and Jason Schock, for their unsolicited contributions.

No more room. See you at the meeting.

INSIDE

OFFICERS' REPORTS
FORTH AVENUE
SOFTWARE REVIEWS
FUNNIES

ANNOUNCEMENTS
ATARI UPDATE
FOOD FOR THOUGHT

SECRETARY'S REPORT

President Dick Hiatt opened the meeting at 6:45, fresh from the San Francisco Computer Fair. He introduced the officers and went right to the first item on the agenda. Due to Ted Langlet's current situation, we have been left, (once again), without a Vice President. The Constitution states that when one of the major offices has been vacated mid-term, the President may appoint a new officer with the membership's approval. Dick appointed Tony Tait, who was accepted. Paul Caesar was appointed to Tony's old position of Treasurer and was also accepted. We still have some positions to be filled. If you are interested, please contact Dick or Tony.

Advertising Director:

Gathers advertising for the I/O Connector.

Program Chairman:

Organizes the Guest Speakers, etc. for the monthly meetings.

Ron Miller gave his report on the North County Group, even though he hasn't attended a meeting recently...

Chuck made the announcement for the Beginner's Group. If you need help with programming in BASIC, this is where you need to be. Call Don for a verification of place and time. Chuck also announced the Library's status: Growing, but not from the heart (YOU!). The Library needs your contributions. The BBS will be up as soon as the conversion to a four disk system is completed.

SAN DIEGO ATARI COMPUTER ENTHUSIASTS

is an independent, nonprofit organization and user's group with no connection to ATARI Corporation, a Warner Communication Company. Membership fees are currently \$10.00 annually from January 1983 to January 1984. Membership includes free access to the computer program library, subscription to "The I/O Connector", and classes, when held. Permission to reprint articles in any noncommercial publication is permitted, without written authorization, as long as proper credit is given.

Commercial Advertising Rates:

Full Page — \$40.00; Half Page — \$20.00; Quarter Page — \$10.00; Business Card — \$5.00

S.D.A.C.E. Officers

PRESIDENT	Dick Hiatt	463-8460
VICE PRESIDENT	Tony Tait	697-7450
TREASURER	Paul Caesar	449-4040
SECRETARY	Don Perkins	479-6253
LIBRARIAN	Chuck Fowler	447-8143
EDITOR	Dave Schultz	273-7859
ASSISTANT EDITOR	Ron Miller	748-7195
PROGRAM CHAIRMAN		
ADVERTISING MGR		
MEMBERSHIP	Norm Davis	448-2971

Supporting Librarian:

Jim Gollwitzer (Poway) 486-2479

CORRESPONDENCE ADDRESS

C/O Dick Hiatt - President
5353 Baltimore Drive, #39 La Mesa, California 92041

NEWSLETTER ADDRESS

C/O Dave Schultz - Editor
4037 Honeycutt Street, San Diego, California 92109

BULLETIN BOARD

SDACEBBS - 9 p.m. to 6 a.m. 447-8143

SUBMISSIONS

Are most welcome. Deadline is the 28th of each month.

If you liked those stands that we had at the computer show. Chuck will sell you one, made to order, for \$12!

Dave Schultz, (without his tie), recommended Tax Advantage, a tax preparing program for the ATARI. "It's the most fun I've had doing my taxes.", he said. Dave is either getting a hefty refund or needs to see a doctor...

Jerry Nation announced that the tax program from Rocky Mountain Software has not been shipped yet, two months after the initial order and several follow up calls. This looks like a company that should probably be avoided.

National University is going to be publishing a computer equipment directory called the BYTE BUYER. If you are interested in receiving it, drop a letter to: BYTE BUYER P.O. Box 83086 San Diego, CA 92138.

Ivy Childs, a sociology student at SDSU, passed out a questionnaire at the meeting. The information is for a thesis project on microcomputer dispersion. The results of the study will be made available to the club. Thanks to all of you who participated.

Dick came back with a couple of jewels from San Francisco. One was Kids and the Atari, a tutorial book on the Atari computers. Dick says it looks quite good. Another gem was Galactic Travel. Want to see the midnight sky from IO? (That's one of Jupiter's moons, not you standing on this newsletter, silly!) This program will let you see it. It can generate a star map for any place in the galaxy. It also includes a game. It is produced by Centurion Software. If you ordered the group subscription to A.N.A.L.O.G., you will be receiving issue #11 as the first issue.

Barton Buehler demonstrated Disk Wiz, a disk utility written in BASIC with machine language subroutines. It is compatible with the NEC 8025 and Epson printers.

Nestor was appointed as the head of the Hardware Group. This group is for those of you who know a little about hardware and wish to do "strange things" with your ATARI. This is NOT the place to bring your ailing 810 and say "make it work.". This is for hardware experimenters only. If you are intersted, give Nestor a call. Nestor demonstrated the ATR-8000. This device is like a super 850 interface. It allows you to hook up almost any disk drive to the ATARI, along with printers, modems and who knows what else. The cost is \$500. For an extra \$250, the memory on the device can be expanded to 64K and will operate CP/M on your ATARI. This is a full-blown CP/M with BIOS, PIP, and all those other nice things.

After the break, slides were shown of the Consumer Electronics Show, courtesy of Michigan ACE. (Can you believe what people will do to a joystick these days?).

Finally, there were program demos of Necromancer, Survivor, Way Out and others. Several people have taken these home and will demo them at the April meeting. Also demonstrated were QIX, a new game from Atari, based on and arcade game, and, for those who stayed, The Bookkeeper, a new bookkeeping ledger system from Atari.

REMINDER

Our next North County Atari Meeting will be held on 19 April at 8081 Mira Mesa Blvd., which is a church across the street and a little west of the Mira Mesa Cinemas. These are working meetings with computers and programs. No agenda or speeches.

Paul Caesar's BEST BUYS

This month was very busy in the retail field for Atari. Three computer stores are dropping the Atari, one store has closed, two new stores opened, and one major department store started selling Atari (Atari 400's for \$189 at the grand opening). It looks as though Atari computers will be very rare in "computer stores." In order to compete with Commodore, Texas Instruments, and Timex, Atari has cut prices and profit margins on their products. This is forcing specialty stores to drop the Atari line to stay profitable. We benefit from lower prices, but receive less support from discount houses and department stores. I guess the idea is that the Atari computer is so simple that instruction is not necessary.

The stores that are closing out their Atari line are:

On-Line Computers in La Mesa and both Computer Stores Int'l. The store which has closed is A.S.C. in La Mesa; it has been replaced by Southland Computer Systems, 6792 University Ave., San Diego, phone 286-6262. They have reduced prices on some Atari software. JC Penneys has started carrying the Atari 800, 400, and related Atari brand products. I know that the Fashion Valley store stocks these and I imagine that other Penneys stores also do. They do not give a discount, but do have good sale prices. Another store which can help you out is Computer Think Tank, 3947 Governor Dr., S.D., phone 457-0677. They discount computers and software 10 to 25% and the owner is very helpful.

A new store of note is Computer Control Center, 5005 Cass St., Pacific Beach, phone 273-5005. This store is managed by Nestor Sanchez (of SDACE fame) and his partner Vince. They are selling Atari hardware, software, and related products (printers, CPM boxes, etc.) at very reasonable prices. Computer Control will also repair your Atari and Nestor is available for consulting about programming problems.

If you need furniture for your computer, check Omni Enclosures, 450 Parkway Plaza #208, El Cajon, phone 449-6281. They sell modular units, very nicely finished which would make any computer feel loved.

That's all I have for this month. If anyone has information from North County or other areas, please let me know. Until then, happy computing.

ANNOUNCEMENTS

PROGRAMMING LANGUAGES AND ATARI COMPUTERS

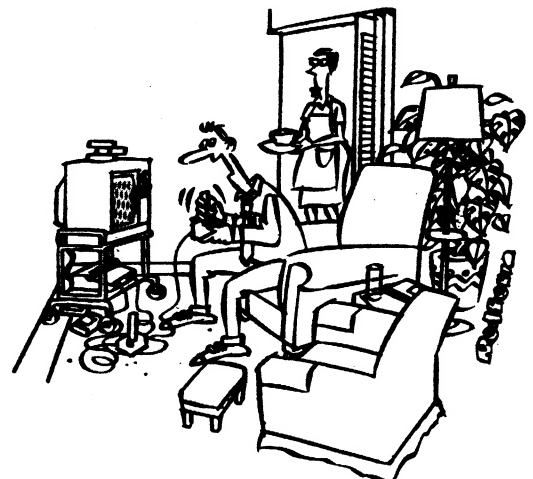
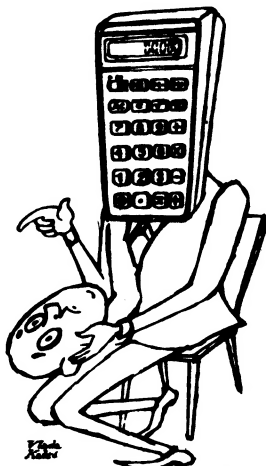
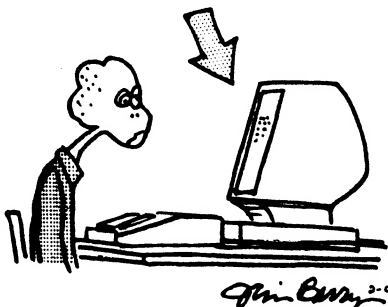
Our guest speaker at the next San Diego Atari meeting will be Mr. Ron Miller. Ron is the manager of the Systems Analysis & Simulation department at General Dynamics. He has been a very active member of our Atari club for several years. Ron will discuss programming languages on the Atari computer. He will cover Atari BASIC, BASIC+, MICROSOFT BASIC, Pascal, Assembler, PILOT, FORTH, LISP, C and ACTION (a new language from OSS). As a basis for comparing these languages, Ron will describe the differences between a compiler, an assembler and an interpreter. He will also summarize what the Atari operating system does for you. This presentation will be made in a language most people will be able to understand (English). So if you have wondered what all these programming languages are about, this next meeting will be of interest to you.

Ron Miller's FORTH AVENUE

Many club members have been experimenting with fig FORTH version 1.1. We now have version 1.4 in the club library and I think you will all enjoy the new version much more than the old one. The new version shows you the top of your screen so you can see what is happening. It has commands for the printer and a nice editor and many more things. I will have copies of the documentation and disk at the next North County meeting. At that time we will also experiment with this new version and see how neat it really is.

I bought another version of FORTH put out by Pink Noise Studios (\$95). This is an excellent implementation of FORTH but the beginner would have trouble getting going (in my opinion). It has the best and fastest editor I have seen and it has many neat features for the systems programmer. It's creator, Bob Gonsalves, really knew what he was doing. Anyone interested in seeing this version of FORTH can do so at the next North County meeting.

IT IS TIME TO HAVE
YOUR VDT CHECKED
FOR EXCESSIVE
RADIATION
EMISSIONS



"Hey! I just made the sportscaster sock the anchorman!"

SOFTWARE REVIEW

SURVIVOR

By Richard Carr
Synapse Software
5327 Jacuzzi St., Ste. 1
Richmond, CA 94804
32K Disk, Cassette, or Cart.

Synapse Software has issued yet another interesting program in SURVIVOR, a space shoot-em-up that offers a challenge for up to four players.

The scenario is a familiar one: you are the lone survivor of a fleet of starcruisers whose mission is to destroy four heavily guarded space forts. The enemy Xenogryphs continuously hurl trackers and fighters at you while you work on destroying the forts. The forts are heavily armed with gunners that await you after their barricades are penetrated. Seven skill levels guarantee a challenge for even the skilled trooper. (The seventh skill level is near impossible to beat!)

You can fly your Starwedge Cruiser solo, with one or two gunners, and/or a propulsion engineer, through a scrolling galaxy complete with asteroids and other dangers. (Sorry 1200XL'ers, you can only use two of the players.) As you destroy all of the gunners of one fort, the fort disintegrates and you move on to the next.

SURVIVOR is a very well designed space game that offers many game options to keep the game interesting. Along with the skill level and player numbers options, you can switch back and forth between a manual and automatic firing mode by simply depressing the "A" key. You can regulate your propulsion to accelerate and decelerate gradually or instantaneously by using the "I" key on your keyboard. If you find yourself desperately in trouble, you can activate one of the seven "smart bombs" which instantly destroys all enemy ships on the screen (and you WILL need them!)

The Starwedge Cruiser resembles the triangular spaceship that we all have seen from the famous Asteroids game, but the firing speed is tremendously faster. When using the two-gunner mode, your cruiser is equipped with two 360 degree cannons mounted on the front and back of the ship. Playing this game with four players is very challenging for all.

The screen scrolling is very smooth and adds to the dimension of the game. The cruiser rotation is very clean for the up-down, left-right positions, but is less responsive for the diagonal positions. Perhaps Mr. Carr designed the cruisers this way intentionally to add to the difficulty.

If you are not completely bored with space games, SURVIVOR should be another welcome game to the Atari owner's library. With the many options available on this game, as your skill level grows, you will still be offered the challenge of SURVIVOR.

SOFTWARE REVIEW

NECROMANCER

Reviewed by Ara Dirtadian

It is truly amazing that this game was developed by SYNAPSE! Ten different people played this game and not one came up with any positive remarks!

There are three different screens to this game and you must accomplish the tasks on all three if you are to destroy the mighty Necromancer!

The first screen has several tasks. The first task is to plant seeds at random locations on the screen. This is harder than it seems because if you plant a seed in the wrong place it will be harder to defend and you are limited with a certain amount of seeds.

The next task is to protect your seeds from on-coming monsters. If the monsters reach any seed, they will devour it instantly. But on the other hand, if the monsters do not destroy a seed within ten to fifteen seconds, the seed blossoms into a beautiful tree.

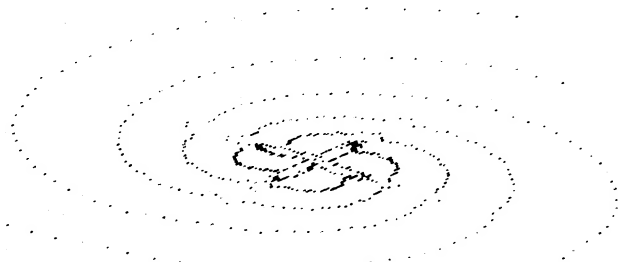
The third task is to protect your trees from a mysterious virus which can be deadly if unnoticed within five to ten seconds. Points are awarded for all the trees that are alive at the end of this screen.

The second screen is interrelated with the first screen since the trees you saved on the first screen are used here. There are eight pits on this screen, each containing a spider's larvae. The only way to kill the larvae is to plant a tree into a pit and the roots will grow and destroy the larvae. If you don't plant a tree, the larvae will hatch into a deadly spider which can kill you at any moment. There are five rooms of this same screen and each one is harder than the last.

And NOW, and the third and final screen, you have the chance to destroy the Necromancer (who is actually another wizard just like you). The Necromancer has the ability to hyperspace around the screen at any time. Your only weapon is to touch the necromancer with your site (wisp) and in doing so, he will be destroyed! Good luck!

As you have probably guessed, this game did not impress me like most of the other great SYNAPSE games. But then again, maybe I just don't understand the plot since I am just thirteen years old. Maybe you'll like it.

(Editor's note: Thanks to Ara for his very well done contribution!)



SOFTWARE REVIEW

THE ADVENTURES OF PROTO

REVIEWED BY STEVE SCHOCK

ASSISTED BY JASON MICHAEL SCHOCK, AGE 5

Requires 16K Tape/24K Disc, ATARI BASIC Cartridge and 1 Joystick.

The Adventures of PROTO from Educational Software, Inc., is a series of three games for children from ages 4 to 9.

The young user is offered a menu of "3 exciting, creative adventures with PROTO, a friendly alien learning about our planet."

MARS-MALLOW is a relatively simple game in which one must move PROTO, accompanied by a large canister, back and forth in order to catch "yummy Martian treats" as they are dropped from a moving spacecraft. Three game speeds are offered.

COLORING BOOK is a joystick controlled sketchpad which is reminiscent of the old ETCH-A-SKETCH toy which has been around for years. This program does, however, offer three different pen colors, three drawing speeds and four pen widths. In addition, completed drawings may be saved to disc or tape for Mom and Dad's approval at a later time.

PLAYTUNE turns a portion (top two rows) of the ATARI keyboard into a simple piano or organ (option). Each key struck will produce a note while displaying the symbol for that note (e.g. C,F,A#) on the screen. As in the preceeding program, your "composed" tunes may be saved to disc or tape.

While all three programs are somewhat cute, I felt that they were only of limited educational value. Visual appeal and ease of use for children is average to above average. Documentation for parents is relatively complete. The SAVE ability of the latter two programs is a nice feature, however, not enough to strongly recommend this software. The biggest flaw perhaps, as with many game programs, is a lack of ability to hold the user's interest.

RIBBONS UNLIMITED

Offers you a complete line of

Computer
Ribbons



Word
Processing
Ribbons



Typewriter
Ribbons



Calculator
Ribbons

- NEW
- RELOADS
- COLORS
- QUANTITY DISCOUNTS

FREE DELIVERY
(In most cases)
\$20 Minimum Order

RIBBONS UNLIMITED 280-0328

4478 1/2 30th St. San Diego, Ca. 92116

Computer Control Center
5005 Cass St., Pacific Beach
(619) 273-5005



**THE
ATARI
SPECIALISTS**

At our new store we welcome all Atari Computer Enthusiasts.
We specialize in Sales & Repairing of all Atari hardware & software.
We'll be happy to help you!

OUR LATEST PROJECT FOR ATARI OWNERS:

ATR 8000 64K CP/M \$750.00

Converts your Atari Computer to a CP/M compatible computer.
Comes complete with software, documentation, cables, and more. Call for Details.

ALL SOFTWARE IS AT DISCOUNTED PRICES FOR A.C.E. CLUB MEMBERS.

C.ITOH 80 Col. Printer \$ 399.00

GEMINI 10 Printer 80 Col. \$ 349.00

GEMINI 15 Printer 132 Col. \$ 549.00

Bring any problem or request to Computer Control Center.
We pledge to do our best to fill your needs at the right price.
Ask for members discount.

ASK FOR: Nestor Sanchez, or Kevin Smith (OWNERS)



PRODUCT UPDATE

ATARI HOME COMPUTER SYSTEM

ATARI BASIC Reference Manual Update

This product update contains a number of corrections and additions to the ATARI BASIC Reference Manual.

Page 1: This definition is missing from the TERMINOLOGY list:

Page 6: This information pertains to the ARITHMETIC OPERATORS subtraction and exponentiation:

Page 7: This Note regards the use of the LOGICAL OPERATORS:

Page 13: This Note is in reference to SCREEN EDITING:

Page 20: This Note regards ON/GOSUB statements:

Page 22: Further information on RESTORE (RES.):

Page 25: Some additional information on using the INPUT (I.) statement:

Floating Point Number: A number containing an integer part, a decimal point, and a fractional part. The total number of significant digits in a floating point number, excluding the exponent, may be either nine or ten. This depends on whether the exponent is an even or odd multiple of 10.

Note: Avoid negating zero, as this will produce an invalid number. For example, if you type

```
PRINT -0
the result will be
-0E-08
```

Note: Since the algorithm used to generate exponents (E) is only an approximation, you cannot obtain integer results with it—for example, $2 \times 2 = 3.99999996$. To correct this, use the following technique:

```
X=2*2
PRINT INT (X+.5)
4
```

Note: Avoid using the statement `PRINT A=NOT B`, as the results are not predictable. Essentially, any PRINT statement with a NOT operator will be unpredictable.

Note: Large amounts of editing may lock up the system. It's recommended that programs under development be stored to cassette or diskette periodically (every 30 or 40 edits) with the SAVE or CSAVE command.

Note: If an ON/GOSUB expression evaluates to a number greater than the number of subroutine entries, then a POP statement will be necessary to clear the stack (see POP command, Section 4).

The RESTORE statement will not generate an error if the line number referenced does not exist. Instead it will RESTORE to the next longer line number in the program. Care should be taken to update RESTORE statements when renumbering a BASIC program.

When executing an INPUT from the screen, avoid moving the cursor away from and then back to the same line, otherwise, the wrong data may be input. Specifically, the INPUT prompt will be included in the INPUT string.

If a string of 128-255 characters is INPUT, then RAM locations 1536-1664 will be overwritten. This area is normally reserved for storage of programs or data. (See the ATARI Tech Reference Notes.)

To INPUT strings of more than 127 characters, use the GET command and store the values into a string (see Section 5, OPEN/CLOSE and PUT/GET commands).

Note: The maximum number of characters that can be INPUT from the screen is 120. The maximum for other devices is 255.

Note: Make sure that every INPUT statement has a variable after it, otherwise, unpredictable results may occur.



Page 26: This regards the use of the LOAD (LO.) command.

This Note should follow the LPRINT (LP.) command description:

Page 27: This information pertains to the file-spec definition:

Page 28: This is an addition to the POINT (P.) section:

In the last paragraph under POINT (PE. or P.), the first sentence should read:

The following sentence should conclude the final paragraph on POINT (PR. or P.):

This note should then conclude this section on POINT (PR. or P.):

This Note regards the PUT (PU.)/GET (GE.) section:

Page 30: Here is a corrected version of the table—note in particular the correction on cmdno 32:

Note: If a program is loaded that is too large for the available memory space, it may give unpredictable results without an error message.

Note: An LPRINT command with a semicolon at the end will cause the following LPRINT statement to print on the next 40-column tab. A 40-column printer will move to the next line in such a case. To use the semicolon effectively, use the OPEN statement for the printer, then write to the printer with a PRINT statement (see OPEN/CLOSE and PRINT commands, Section 5).

Note: Be sure to include the closing quotation marks on a HESPEC parameter, especially when putting multiple statements on one line. For example:

```
OPEN #1, 4, 0, "D:TEST":STOP
will work, but
OPEN #1, 4, 0, "D:TEST STOP
will not function correctly.
```

Note: To update a file, you must open it with a 12 in aexp1.

A comma tabs every 10 spaces.

However, if the last character to be printed (as in a string with quotation marks) is a `;` or `!`, then the next PRINT will begin at the end of the current line.

Note: In rare circumstances data printed to a diskette may have part of the BASIC program embedded in it. If this occurs, retry the operation.

Note: In certain circumstances the GET function may modify other variables within the program. To avoid this, PRINT any number to the screen between each GET.

cmdno	OPERATION	EXAMPLE
3	OPEN	Same as BASIC OPEN
12	CLOSE	Same as BASIC CLOSE
17	STATUS REQUEST	Same as BASIC STATUS
17	DRAW LINE	Same as BASIC DRAW/LO
18	FILE	See Section 9
32	RENAME	XIO 32 #1:0:0 D:TEMP CASH
33	DELETE	XIO 33 #1:0:0 D:TEMP BAS
35	LOCK FILE	XIO 35 #1:0:0 D:TEMP BAS
36	UNLOCK FILE	XIO 36 #1:0:0 D:TEMP BAS
37	POINT	XIO 37 #1:A:B
38	NOTE	XIO 38 #1:X:Y
254	FORMAT	XIO 254 #1:0:0 "D2"



Page 33: The last sentence in the paragraph about the CLOG function should read:

Page 34: The last sentence in the paragraph about the LOG function should read:

Page 38: The last line in the first paragraph should read:

Page 39: The last sentence should read:

This is additional information on the VAL function:

This information pertains to string concatenation:

In Figure 7-6, the correct result of the program on the left is:

Page 42: Some additional information on using the DIM (DI.) statement:

Page 43: This is an additional Note for the DIM (DI.) section:

Additional information on using the CLR command:

CLOG(0) through CLOG(1) are inaccurate and should not be used.

LOG(0) through LOG(1) are inaccurate and should not be used.

was stored there previously.

Upon execution, the screen displays THE SQUARE ROOT OF 10000 IS 100

number: 1000000000.

Only the numeric field will be translated, while the text will be ignored. For example

```
VAL("SSUM")=5
```

Note: BASIC cannot move strings of 256-character multiples correctly. String lengths should be checked, if any string contains a multiple of 256 characters, add or subtract one character from the amount to be moved.

BCD#

Make sure that the DIM statement does not contain a space between the string or array name and the left parenthesis of the dimensioned amount, otherwise, the following will happen—

```
DIM L (10) becomes DIM L(10)
```

—and this variable can no longer be referenced

Note: The command COM is identical to DIM and may be used in its place.

Note: Due to a discrepancy in boundary checking, arrays of up to 32766 by 32766 in size can be dimensioned. The programmer should size the array ahead of time to ensure that there is no "virtual" storage space.

The second sentence in the last paragraph, beginning "It also clears..." should be deleted.

The CLR command will not initialize the values in strings and arrays.

Page 45: Here is a corrected version of TABLE 9.1:

Page 49: The last sentence under PLOT (PL.) should read:

Page 50:

Page 51: The sentence directly under TABLE 9.4 should read:

Page 53: Here is a corrected version of TABLE 9.5:

TABLE 9.1—TABLE OF MODES AND SCREEN FORMATS

Gr Mode	Mode Type	Chars (Columns)	Vert (Rows) Full Screen	Vert (Rows) Split Screen	Number Of Color Registers	Split Screen	RAM Required Full Screen
0	TEXT	40	24	12	16	—	96K
1	TEXT	20	24	12	5	—	64K
2	TEXT	20	10	12	5	—	48K
3	GRAPHICS	40	24	12	4	—	48K
4	GRAPHICS	80	40	48	2	—	69K
5	GRAPHICS	80	40	48	4	—	117K
6	GRAPHICS	160	80	96	2	—	217K
7	GRAPHICS	160	80	96	4	—	419K
8	GRAPHICS	320	160	192	16	—	812K

"The range of points begins at 0 and extends..."

In TABLE 9.3, the color PURPLE should be inserted after PINK in the first column, and the number 5 should be inserted after 4 in the second column.

"DEFAULT" occurs if no SETCOLOR statement is used.

MODE SETCOLOR COLOR TABLE

Default Colors	Mode or Condition	Color Register No.	Color (Name)	DESCRIPTION AND COMMENTS
LIGHT BLUE	Mode 0 and all text windows	0	Color data actually determines character to be printed	Character luminance (same color as background)
DARK BLUE		2		Character Background
BLACK		4		Border
ORANGE	Mode 1	0	Color data actually determines character to be printed	Character
LIGHT GREEN	Mode 1 and 2	1		Character
DARK BLUE		2		Character Background
RED		3		Character
BLACK	(text modes)	4		Background border
ORANGE	Mode 3, 5, and 7	0		Graphics point
LIGHT GREEN		1		Graphics point
DARK BLUE		2		Graphics point
BLACK	(four-color modes)	4		Graphics point (background default) border
ORANGE	Mode 4 and 6 (two-color modes)	0		Graph. point
BLACK		4		Graphics point (background default) border
LIGHT BLUE		1		Graphics point luminance (same color as background)
DARK BLUE	Mode 8 (1 color)	2		Graphics point (background default)
BLACK	(2 luminance)	4		Border



YOU'RE GONNA LOVE THESE ROCK BOTTOM PRICES!

PROGRAM NAME	RETAIL PRICE	SALE PRICE	PROGRAM NAME	RETAIL PRICE	SALE PRICE
ADVANCED MUSIC SYSTEM	29.95	21.95	DAVID'S MIDNIGHT MAGIC	34.95	24.49
ADVENTURE ON A BOAT	24.95	17.95	DEADLINE	49.95	34.49
AK	14.95	24.49	DEADLY DUCK-ROM	34.95	26.49
ALL BABA & THE 40 THIEVES	32.95	24.95	DEFENDER	44.95	31.95
ALIEN AMBUSH	29.95	21.95	DELUXE INVADER-ROM	39.95	27.95
ALIEN GARDEN-ROM	19.95	27.95	DIG DUG	44.95	31.95
ALIEN SWARM	14.95	24.49	DISK DETECTIVE	29.95	21.95
ANDROMEDA (NEW IMPROVED)	29.95	21.95	DISK MANAGER	29.95	21.95
ARMOR ASSAULT	39.95	27.95	DISK WORKSHOP	34.95	24.49
ASTEROIDS-ROM	14.95	26.49	DISKETTE INVENTORY SYSTEM	24.95	17.49
ATARI ASSEMBLER EDITOR	59.95	42.95	DISKEY	49.95	34.49
THE ATARI ASSEMBLER-BOOK	12.95	9.95	DISKSCAN	40.00	28.00
ATARI BASIC	59.95	42.95	DODGE RACER	34.95	24.49
ATARI BASIC REF MANUAL	10.95	7.95	DRELBS	34.95	24.49
ATARI BASIC-BOOK	10.95	8.95	EASTERN FRONT (1941)	29.95	21.95
ATARI BASKETBALL-ROM	34.95	24.49	EDIT 6502-ROM	199.95	144.95
ATARI BOOKKEEPER	149.95	106.95	EMBARGO-ROM	44.95	31.95
ATARI BOOKKEEPER KIT	249.95	179.95	ET HOME PHONE	49.95	35.95
ATARI GAMES & REC.-BOOK	14.95	11.95	FACEMAKER	34.95	24.49
ATARI HOME FILING MANAGER	49.95	35.95	FAMILY FINANCE	49.95	37.95
ATARI HOME MANAGER KIT	79.95	57.95	FANTASTIC VOYAGE-ROM	34.95	26.49
ATARI MACRO ASSEM/TEXT ED	89.95	64.49	FAST EDDY-ROM	34.95	26.49
ATARI MICROSOFT BASIC	89.95	64.49	FILEFAX	129.00	89.95
ATARI MUSIC COMPOSER-ROM	39.95	29.95	FILE MANAGER +	99.95	68.95
ATARI PILOT HOME PKG-ROM	79.95	56.95	FILE-IT 2 SYSTEM	49.95	34.49
ATARI PILOT FOR BEGIN-BOOK	14.95	11.95	FINANCIAL WIZARD	59.95	39.95
ATARI PROGRAMMER KIT	69.95	49.95	FLAME LORDS	34.95	24.95
ATARI SOUND & GRAPHICS-BOOK	9.95	8.95	FLASH GORDON-ROM	34.95	26.95
ATARI SPEED READING	74.95	54.95	FLIP OUT	29.95	21.95
ATARI TECH USER NOTES	29.95	21.95	FIREBIRD-ROM	39.95	27.95
ATARI TELELINK-ROM	29.95	21.95	FORMULA 1 RACING	29.95	21.95
ATARI TOUCH TYPING	24.95	17.95	FORT APOCALYPSE	34.95	24.49
ATARI WORLD	59.95	41.95	FROGGER	34.95	24.49
ATARI WRITER	79.95	56.95	GALACTIC CHASE	29.95	21.95
ATTACK AT EP-CYG-4	32.95	22.95	GALACTIC GLADIATOR	39.95	27.95
BANDITS	34.95	24.95	GALAHAD & THE HOLY GRAIL	29.95	21.95
BASEBALL (IN HOME)	34.95	24.95	GALAXIAN	44.95	31.95
BASIC COMPILER (DATASOFT)	99.95	68.95	GENETIC DRIFT	29.97	21.97
BATTLE FOR NORMANDY	39.95	27.95	GHOST ENCOUNTERS	29.95	21.95
BATTLE OF SHILOH	39.95	27.95	GLOBE MASTER	29.99	21.95
BATTLE TREK	29.95	21.85	GOLD MINE-ROM	39.95	27.95
BISHOP'S SQUARE	29.95	21.95	GOLF CHALLENGE	24.95	17.49
THE BLADE OF BLACKPOOL	39.95	27.95	GOLF	34.95	28.49
BOOK OF ATARI SOFTWARE '83	19.95	14.95	GORG-ROM	44.95	28.49
BUG OFF!	29.95	21.95	GRAPHIC GENERATOR	24.95	17.49
CASTLE WOLFENSTEIN	29.95	21.95	GRAPHIC MASTER	39.95	27.95
CANYON CLIMBER	29.95	21.95	GRAPHICS COMPOSER	39.95	27.95
CATACOMBS OF BARUTH	29.95	21.95	GRAPH WORKSHOP	74.95	54.95
CAVE-IN-ROM	39.95	27.95	HOME ACCOUNTANT	34.95	24.49
CAVERNS OF MARS	39.95	28.95	INTRUDER	24.95	17.95
CENTPEDE-ROM	44.95	31.95	INVASION ORION	24.95	17.95
CHECKERS	49.95	34.49	INVITATION TO PROGRAM 3	29.95	21.95
CHESS	69.95	49.95	IT IS BALLOON	34.95	24.49
CHICKEN	34.95	24.49	JAMBREAKEER	29.95	21.95
CHOPFLIPPER	34.95	24.95	JERRY WHITE'S MUSIC LESSON	29.95	21.95
CLOWN JUMPER	34.95	24.49	JOURNEY TO THE PLANETS	29.95	21.95
CLOWNS & BALLOONS	29.95	21.95	JUGGLER	29.95	21.95
COLOR PRINT	39.99	27.95	JUGGLES HOUSE	29.95	21.95
COMMUNICATOR KIT	279.95	209.95	JUGGLES RAINBOW	29.95	21.95
COMPU-READ	29.95	21.95	K-DOS	89.95	64.49
COMPU-MATH/FRACTION	39.95	27.95	KID GRID	29.95	21.95
COMPU-MATH/DECIMALS	39.95	27.95	KIDS AND THE ATARI-BOOK	19.95	13.95
CONVERSATIONAL FRENCH	59.95	42.95	KINDERCOMP	29.95	21.95
CONVERSATIONAL GERMAN	59.95	42.95	K-RAZY SHOOTOUT-ROM	49.95	34.49
CONVERSATIONAL ITALIAN	59.95	42.95	K-RAZY KRITTERS-ROM	49.95	34.49
CONVERSATIONAL SPANISH	59.95	42.95	K-STAR PATROL-ROM	49.95	34.49
THE COSMIC BALANCE	39.95	27.95	K-RAZY ANTIKS-ROM	49.95	34.49
CROSSFIRE-ROM	44.95	31.95	KAYOS	34.95	24.49
CRUSH CRUMBLE & CHOMP	29.95	21.95	KING ARTHUR'S HEIR	29.95	21.95
CYTHON MASTERS	39.95	27.95	LABYRINTH	29.95	21.95
DATA MANAGEMENT SYSTEM	22.95	16.95	LETTER PERFECT (40/80)	149.95	109.95
DATA PERFECT	39.95	24.95	LETTER PERFECT-ROM (40)	199.95	144.95
DATALINK	19.95	27.95	LETTER PERFECT UTILITY	29.95	21.95
DATASIM 65 2.0	89.97	61.95	LISP INTERPETER	124.95	89.95
			LOST COLONY	29.95	21.95
			LUNAR LANDER	20.95	14.49
			MAD-NETTER	34.95	24.49
			MASH-ROM	39.95	27.95
			MASTER TYPE	39.95	27.95
			MAURAUDE	34.95	24.49
			MAX/65 (WITH OS/A+)	80.00	54.95
			MICROPAINTER	34.95	24.49
			MINER 2049'ER-ROM	49.95	34.49
			MISSILE COMMAND-ROM	34.95	26.49
			MONSTER MAZE-ROM	39.95	27.95
			MOON BASE IO	29.95	21.95
			MOON SHUTTLE	39.95	27.95
			MOUSKATTACK	34.95	24.49
			MUSIC BOX	29.95	21.95
			MY FIRST ALPHABET	34.95	24.95
			NAUTILUS	34.95	24.49
			NEXAR-ROM	39.95	27.95
			NUMBER CRUNCH-ROM	34.95	24.95
			ODIN	49.95	34.49
			OS-A+ & BASIC A+	80.00	54.95
			PAC MAN-ROM	44.95	31.95
			PACIFIC COAST HIGHWAY	29.95	21.95
			PAGE 6	34.95	24.49
			PATHFINDER	34.95	24.49
			PICKINICK PARANOIA	34.95	24.49
			PIG PEN	29.95	21.95
			PINBALL	29.95	21.95
			PLATTER MANIA-ROM	39.95	27.95
			P.M. ANIMATOR	34.95	24.49
			POKER-S.A.M.	24.49	17.95
			POOL 1.5	34.95	24.49
			POOL 400-ROM	39.95	27.95
			PREPPIE	139.95	99.95
			PREPPIE	29.95	21.95
			PRESCHOOL IQ BUILDER	23.95	17.95
			PRESCHOOL IQ BUILDER 2	23.95	17.95
			PRISM	24.95	17.95
			PROBE I	34.95	24.49
			PROGRAMMER'S WORKSHOP	34.95	24.49
			PROTECTOR II	34.95	24.49
			REPTILIAN	44.95	31.95
			RASTER BLASTER	29.95	21.95
			RHYMES & RIDDLES	29.95	21.95
			RICOCHET	19.95	14.95
			SAGA #1-#12 (COST EACH)	39.95	27.95
			SAMMY THE SEA SERPENT	23.95	16.95
			SCRAM	24.95	17.95
			SEA DRAGON	34.95	24.49
			SEA FOX	29.95	21.95
			SENTINEL 1	34.95	24.95
			SERPENTINE	34.95	24.95
			747 LANDING SIMULATOR	22.95	16.95
			SHADOW WORLD	34.95	24.49
			SHAMUS	34.95	27.95
			THE SHATTERED ALLIANCE	39.95	27.95
			SHOOTING ARCADE	29.95	21.95
			SLIME	34.95	24.49
			SNAKE BYTE	29.95	21.95
			SNAPPER	32.95	22.95
			SNEAKERS	29.95	21.95
			SNOOPER TROOPS #1	44.95	31.95
			SNOOPER TROOPS #2	44.95	31.95
			SOFTWARE AUTO-MOUTH (SAM)	59.95	41.49
			SPACE EGGS	29.95	21.95
			SPACE INVADERS-ROM	34.95	26.49
			SPACE SHUTTLE	29.95	21.95
			SPEED READ PLUS	59.95	41.49
			SPEEDWAY BLAST	29.95	21.95
			SPELL WIZARD	79.95	54.95
			STAR BLAZER	31.95	21.95
			STARCROSS	39.95	27.95
			STAR RAIDERS-ROM	44.95	31.95
			STAR WARRIOR	39.95	27.95
			STORY MACHINE	34.95	24.49
			STRATOS	34.95	24.49
			SURVIVAL ADVENTURE	24.95	16.50
			SURVIVOR	34.95	24.49
			SWIFTY TACH MASTER	29.95	21.95
			SYN ASSEMBLER	49.95	34.49
			TAX ADVANTAGE	59.95	42.95
			TELEATARI	39.95	27.95
			TELECOM	69.95	49.95
			TELETALK	49.95	36.95
			TEMPLE OF APASHAI	39.95	27.95
			TEXT WIZARD I	99.95	68.95
			THE ADVENTURES OF OSWALD	23.95	17.95
			THE GUARDIAN OF GORN	34.95	24.95
			THE NEXT STEP	39.95	27.95
			3-D SUPERGRAPHICS	39.95	27.95
			THRESHOLD	39.95	27.95
			TIGERS IN THE SNOW	39.95	27.95
			TIME WISE	29.95	21.95
			TRACK ATTACK	29.95	21.95
			TRIVIA TREK	29.95	21.95
			TYPE ATTACK	39.95	27.95
			TUMBLE BUGS	29.95	21.95
			TURMOIL-ROM	34.95	26.95
			TUTTI FRUTTI	24.95	17.95
			TWERPS	34.95	24.49
			ULYSSESS & GOLDEN FLEECE	39.95	27.95
			UPPER REACHES OF APASHAI	99.95	13.95
			VC	15.00	17.49
			VISCALC	250.00	179.95
			WALL WAR	29.95	21.95
			WARLOCK'S REVENGE	34.95	24.49
			WAY OUT	39.95	27.95
			WIZARD & PRINCESS	32.95	22.95
			WIZARD OF WOR	39.95	27.95
			WORDRACE	24.95	17.49
			WORM WAR I-ROM	34.95	26.49
			YOUR ATARI COMPUTER-BOOK	16.95	12.95
			ZAXXON	39.95	27.95
			ZORK I	39.95	27.95
			ZORK II	39.95	27.95
			ZORK III	39.95	27.95

HARDWARE

AMDEK COLOR I 13" MON.	339.95
ATARI HOME COMPUTERS	\$CALL
ATARI NUMERIC KEYPAD	94.95
410 RECORDER	72.95
810 DISK DRIVE	424.95
850 INTERFACE MODULE	179.95
C. ITOH PROWRITER I	394.95
C. ITOH PROWRITER II	649.95
C. ITOH STARWRITER	1325.00
ELEPHANT SS/SD DISK	10/18.95
IN HOME 400 KEYBOARD	94.95
INTEC 32K RAM	69.95
INTEC 48K RAM	119.95
MOSAIC 64K RAM SELECT	149.95
AXLON 128K RAMDISK	464.95
HAYES SMARTMODEM 300 BD	194.95
HAYES SMARTMODEM 1200 BD	499.95
K-BYTE STICK STAND	5.95
LE STICK	29.95
NEC 8023 PRINTER	459.95
NEC 12" HIRES GREEN SCRIN	149.95
NEC 12" ECONO GREEN SCRIN	109.95
NOVATION J-CAT MODEM	109.95
NOVATION SMART-CAT 103	179.95
NOVATION SMART-CAT 312	429.95
PERCOM SS/DD/1DR (88K)	419.95
PERCOM SS/DD/1DR (176K)	539.95
PERCOM SS/DD/2DRS (352K)	859.95
PERCOM DS/DD/1DR (352K)	649.95
PERCOM DS/DD/2DRS (704K)	939.95
SIGNALMAN MK II MODEM	79.95
USF 12" AMBER MONITOR	159.95
VERBATIM SS/DD DISK	10/25.00
VERSAWRITER GRAPH TABLET	239.95
WICO JOYSTICK	21.95
WICO REDBALL JOYSTICK	24.95
WICO DELUXE JOYSTICK	29.95
WICO TRACKBALL	49.95
WICO 12 FT EXTENSION CORD	6.95

Call us... we can help! (619) 765-0239

P.O. Box 1099, 2225 Main Street, Julian, Calif. 92036



TERMS: WE ACCEPT VISA/ MASTERCARD (please include name, address, phone number, card number & expiration date), cashiers' check, or personal check (allow 10 working days to clear). Unless otherwise requested, we ship U.P.S. surface (street address required). Please include \$5 or 5% (whichever is greater) for shipping & handling. U.P.S. blue label slightly higher, please call. Please add \$10 or 5% (whichever is greater) for shipping and handling of monitors due to their excessive weight. Foreign orders please include \$10 or 10% (whichever is greater) for shipping and handling. **Please INCLUDE PHONE NUMBER WITH ALL ORDERS.** All items are new and carry manufacturer's warranty. Apple Country, Ltd. cannot guarantee the merchantability of any product. Prices are subject to availability and change without notice. Call before returning goods for repair or replacement, RMA number required. California residents add 6% sales tax. Please send S.A.S.E. for free catalog. **WE CARRY A FULL LINE OF SOFTWARE FOR APPLE, ATARI, IBM, TI, TRS-80, AND VIC.**

Apple Country, Ltd. is a **DISCOUNT MAIL ORDER HOUSE** for the micro computer industry and is a California corporation not affiliated with Apple Computer Inc. Apple is a trademark of Apple Computer Inc.

BUY / SELL / TRADE

FOR SALE

Assorted Disks - Shamus, Match Racer, My First Alphabet, & many more. Call Jim G. at 486-2479.

FOR SALE

S.A.M. DISK for 32K Atari 400/800. Original & Guaranteed. \$40. Bart - 276-8738

FOR SALE

825 ATARI PRINTER with cables, manuals, **AND** Atari's Word Processor Program. \$550 takes everything. Call Chuck at 447-7072.

FOR SALE

32K Intek RAM board - \$50; 16K Atari RAM board - \$25; APX Ultimate Renumber Utility (cassette) - \$10; APX Terminal Emulator (cassette) - \$10; Call Craig at 274-3495

FOR SALE

Atari 410 recorder in good condition plus Telelink I — all for \$35.00. Bob Martin - 579-9152

FOR SALE

Atari CX852 8K-RAM memory module. Sell for \$15.00 Call Tom at 434-3978.

FOR SALE

16K Atari memory module, new in box. \$50 or (2) for \$95. Call Bob Martin 579-9152.

BUY / SELL / TRADE Advertisements are **FREE** to non-commercial members of the S.D.A.C.E. Ads must be 25 words or less. Specify the category desired. Only typewritten submission will be printed. (Give my eyes a break!) Mail to **B/S/T, 4037 Honeycutt Street, San Diego, CA 92109. No Phone Calls, Please!** Deadline is the 28th.

ETC.

“People rarely distinguish among
data, information, knowledge, and wisdom.
Yet they are as different from one another—
and as interlocking
—as starch molecules, flour, bread, and the
flavorful memory of a superb morning croissant.”

— Lewis Branscomb,
chief scientist at IBM

The I/O Connector

5353 BALTIMORE DR., #39
LA MESA, CA 92041

OUR NEXT MEETING,

18 April, 1983
6:30 p.m.

North Park Recreation Center
4044 Idaho Street
Social Room

- Programming Languages
- Software Demos
- Y'all Come!

TO: